

IN THE CLAIMS:

1. (Original.) A method for acquiring a first signal transmitted from a first satellite, comprising:
acquiring a second signal transmitted from a second satellite; and
searching for the first signal within an expected offset range from the acquired second signal until the first signal is acquired.
2. (Original.) The method of claim 1, wherein the first satellite and the second satellite are different satellite types, each belonging to a different satellite constellation.
3. (Original.) The method of claim 2, wherein the second satellite is a low earth orbit satellite.
4. (Original.) The method of claim 3, wherein the first satellite is a GPS satellite and the first signal comprises a GPS Y code signal.
5. (Original.) The method of claim 4, wherein the second satellite is an Iridium satellite.
6. (Original.) The method of claim 5, wherein the expected offset range is a function of propagation delay and a likely clock error between the first signal from the GPS satellite and the second signal from the Iridium satellite.
7. (Original.) The method of claim 6, wherein the expected offset range is preset.
8. (Original.) The method of claim 7, wherein the expected offset range is 6 milliseconds.
9. (Original.) The method of claim 5, further comprising estimating a position of a user with respect to the Iridium satellite.

10. (Original.) The method of claim 9, wherein the user position is estimated as a function of position within a multiple beam antenna.

11. (Original.) The method of claim 10, wherein the expected offset range is a function of the user position.

12. (Original.) The method of claim 9, wherein user position is estimated as a function of a Doppler profile of the Iridium satellite.

13. (Original.) The method of claim 10, wherein the expected offset range is a function of the user position.

14. (Original.) A device for acquiring a first signal transmitted from a first satellite, comprising:

a first receiver configured to acquire the first signal; and

a second receiver coupled to the first receiver, the second receiver configured to acquire a second signal transmitted from a second satellite and to send to the first receiver an estimate of an offset between the first signal and the second signal;

whereby the first receiver can acquire the first signal by searching for the first signal within an expected offset range from the acquired second signal until the first signal is acquired.

15. (Original.) The device of claim 14, further comprising:

an antenna adapted to receive the first signal and the second signal;

at least one preamplifier in signal communication with the antenna and at least one of the first receiver or the second receiver to amplify at least one of the first signal or the second signal; and

a clock coupled to the first receiver and the second receiver.

16. (Original.) The device of claim 15, wherein the second receiver further comprises a bandpass filter configured to allow the second signal to pass and to reject out of band interference signals.

17. (Original.) The device of claim 16, wherein the first receiver is a GPS Y code receiver.

18. (Original.) The device of claim 17, wherein the second receiver is an Iridium satellite receiver.

19. (Original.) The device of claim 18, wherein the second receiver further comprises;

a hybrid coupler coupled to the bandpass filter to produce inphase and quadrature signals;

an inphase analog to digital converter in signal communication with the inphase signal;

a quadrature analog to digital converter in signal communication with the quadrature signal; and

a digital signal processor configured to receive the inphase signal and the quadrature signal and to process the signals to acquire the second signal from the Iridium satellite.

20. (Original.) The device of claim 19, wherein the second signal contains ephemeris information for the Iridium satellite.

21. (Original.) A device for acquiring a first signal transmitted from a first satellite, comprising:

a means for acquiring the first signal;

a means for acquiring a second signal transmitted from a second satellite; and

a means for estimating an offset between the first signal and the second signal;


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whereby the means for acquiring the first signal searches for the first signal within an expected offset range from the acquired second signal until the first signal is acquired.

22. (Original.) The method of claim 21, wherein the first satellite and the second satellite are different satellite types, each belonging to a different satellite constellation.

23. (Original.) The method of claim 22, wherein the second satellite is a low earth orbit satellite.

24. (Original.) The method of claim 23, wherein the first satellite is a GPS satellite and the first signal comprises a GPS Y code signal.

25. (Original.) The method of claim 24, wherein the second satellite is an Iridium satellite.

26. (Original.) The method of claim 27, wherein the expected offset range is a function of propagation delay and a likely clock error between the first signal from the GPS satellite and the second signal from the Iridium satellite.

27. (Original.) The method of claim 26, wherein the expected offset range is preset.

28. (Original.) The method of claim 27, wherein the expected offset range is 6 milliseconds.

29. (Original.) The method of claim 26, further comprising a means for estimating a position of a user with respect to the Iridium satellite.

30. (Original.) The method of claim 29, wherein the user position is estimated as a function of position within a multiple beam antenna.

31. (Original.) The method of claim 30, wherein the expected offset range is a function of the user position.

32. (Original.) The method of claim 29, wherein user position is estimated as a function of a Doppler profile of the Iridium satellite.

33. (Original.) The method of claim 32, wherein the expected offset range is a function of the user position.

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